

PATENT

AMENDMENTS TO THE CLAIMS

Following is a complete set of claims as amended with this Response. This complete set of claims excludes cancelled claims 19-21, 30-32, and 37-39 and includes amended claims 1, 5, 6, 22, and 33.

1. (Currently Amended) A method of performing a an automatic capture threshold test in an implantable cardiac stimulation device, the method comprising:
 - loading a an adjustable, user-provided atrio-ventricular delay setting;
 - delivering a series of ventricular stimulation pulses following successive expirations of the atrio-ventricular delay setting;
 - verifying if capture occurs for each ventricular stimulation pulse; and
 - defining a ventricular capture threshold based on capture verification data.
2. (Original) The method of claim 1, wherein delivering the series of ventricular stimulation pulses comprises:
 - delivering a first ventricular pulse following the expiration of a first atrio-ventricular delay setting; and
 - delivering a second ventricular pulse following the expiration of a second user-provided atrio-ventricular delay setting, during a myocardial refractory period to avoid myocardium depolarization.
3. (Original) The method of claim 1, further comprising adjusting a frequency of performing a periodic threshold test based on capture threshold stability.
4. (Original) The method of claim 3, further comprising adjusting a frequency of storing the ventricular capture threshold based on the capture threshold stability.
5. (Currently Amended) The method of claim 2, wherein loading the adjustable, user-provided atrio-ventricular delay setting comprises loading an AV delay setting.

PATENT

6. (Currently Amended) The method of claim 2, wherein loading the adjustable, user-provided atrio-ventricular delay setting comprises loading a PV delay setting.

7. (Original) The method of claim 1, further comprising storing the atrio-ventricular delay setting.

8. (Original) The method of claim 1, further comprising performing the threshold test in response to a loss of capture detection.

9. (Original) The method of claim 8, wherein performing the threshold test comprises performing the threshold test on a periodic basis.

10. (Original) The method of claim 3, wherein defining the ventricular capture threshold comprises storing a lowest stimulation output at which ventricular capture was verified.

11. (Original) The method of claim 1, further comprising storing a capture threshold in a threshold record.

12. (Original) The method of claim 11, wherein storing the capture threshold in the threshold record comprises adjustably storing the capture threshold on a periodic basis, based on the stability of the ventricular capture threshold.

13. (Original) The method of claim 11, wherein storing the capture threshold comprises storing a first capture threshold in a threshold record, which first capture threshold is not overwritten by a second capture threshold when the first capture threshold is determined to be unstable.

PATENT

14. (Original) The method of claim 11; wherein storing the capture threshold comprises storing a first capture threshold in a threshold record, and overwriting the first capture threshold by a second capture threshold when the first capture threshold is determined to be stable.

15. (Original) The method of claim 11, further comprising storing a first capture threshold in a threshold record and compressing data from consecutively defined capture thresholds of equal value.

16. (Original) The method of claim 11, further comprising displaying the capture threshold stored in the threshold record.

17. (Original) The method of claim 16, further comprising monitoring lead stability using the threshold record.

18. (Original) The method of claim 16, further comprising monitoring a clinical condition of a patient using the threshold record.

19. (Cancelled)

20. (Cancelled)

21. (Cancelled)

22. (Currently Amended) A cardiac stimulation device comprising:
a control circuit that loads a an adjustable, user-provided atrio-ventricular delay setting to perform an automatic capture threshold test;
a pulse generator coupled to the control circuit, that selectively generates stimulation pulses for delivery to at least one cardiac chamber;

PATENT

one or more electrodes, connected to the pulse generator, that deliver a series of ventricular stimulation pulses following successive expirations of the atrio-ventricular setting; and

wherein the control circuit verifies if capture occurs for each ventricular stimulation pulse, and defines a ventricular capture threshold based on capture verification data.

23. (Original) The cardiac stimulation device of claim 22, wherein the series of ventricular stimulation pulses comprise:

a first ventricular pulse following the expiration of a first atrio-ventricular delay setting; and

a second ventricular pulse following the expiration of a second atrio-ventricular delay setting, during a myocardial refractory period to avoid myocardium depolarization.

24. (Original) The cardiac stimulation device of claim 22, further comprising a timing circuit that adjusts a frequency of performing a periodic threshold test based on capture threshold stability.

25. (Original) The cardiac stimulation device of claim 24, wherein the timing circuit further adjusts a frequency of storing ventricular capture threshold data based on the capture threshold stability.

26. (Original) The cardiac stimulation device of claim 22, wherein the atrio-ventricular delay setting comprises an AV delay setting.

27. (Original) The cardiac stimulation device of claim 22, wherein the atrio-ventricular delay setting comprises a PV delay setting.

PATENT

28. (Original) The cardiac stimulation device of claim 22, wherein the control circuit performs the threshold test in response to a loss of capture detection.

29. (Original) The cardiac stimulation device of claim 22, further comprising a data storage device that stores capture threshold records.

30. (Cancelled)

31. (Cancelled)

32. (Cancelled)

33. (Currently Amended) A cardiac stimulation device comprising:
means for acquiring a an adjustable, user-provided atrio-ventricular delay setting to perform an automatic capture threshold test;
means for delivering a series of ventricular stimulation pulses following successive expirations of the atrio-ventricular delay setting;
means for verifying if capture occurs for each ventricular stimulation pulse;
and
means for defining a ventricular capture threshold based on capture verification data.

34. (Original) The cardiac stimulation device of claim 33, wherein the verifying means performs the threshold test in response to a loss of capture detection.

35. (Original) The cardiac stimulation device of claim 33, wherein the atrio-ventricular delay setting is any of a user-provided AV delay value, or an automatically adjustable AV delay setting.

PATENT

36. (Original) The cardiac stimulation device of claim 33, wherein the atrio-ventricular setting is any of a user-provided PV delay value, or an automatically adjustable PV delay setting.

37. (Cancelled)

38. (Cancelled)

39. (Cancelled)